

**AMENDMENTS TO THE SPECIFICATION**

**Please replace the abstract with the following abstract:**

A method that allows the easy generation of low-density parity-check codes that can realize superior error-correcting characteristics. A processor of a transmission line encoder constructs parity check matrix  $H$  from partial matrix  $H_1$  of  $m$  rows and  $k$  columns on the left side and partial matrix  $H_2$  of  $m$  rows and  $m$  columns on the right side. The processor generates partial matrix  $H_2$  as a unit matrix. The processor generates partial matrix  $H_1$  to satisfy the conditions that, when any two rows contained in partial matrix  $H_1$  are selected, the two rows have periods that are relatively prime, or when the periods are identical, the two rows have different phases. The processor then joins partial matrix  $H_1$  and partial matrix  $H_2$  to generate parity check matrix  $H$ .